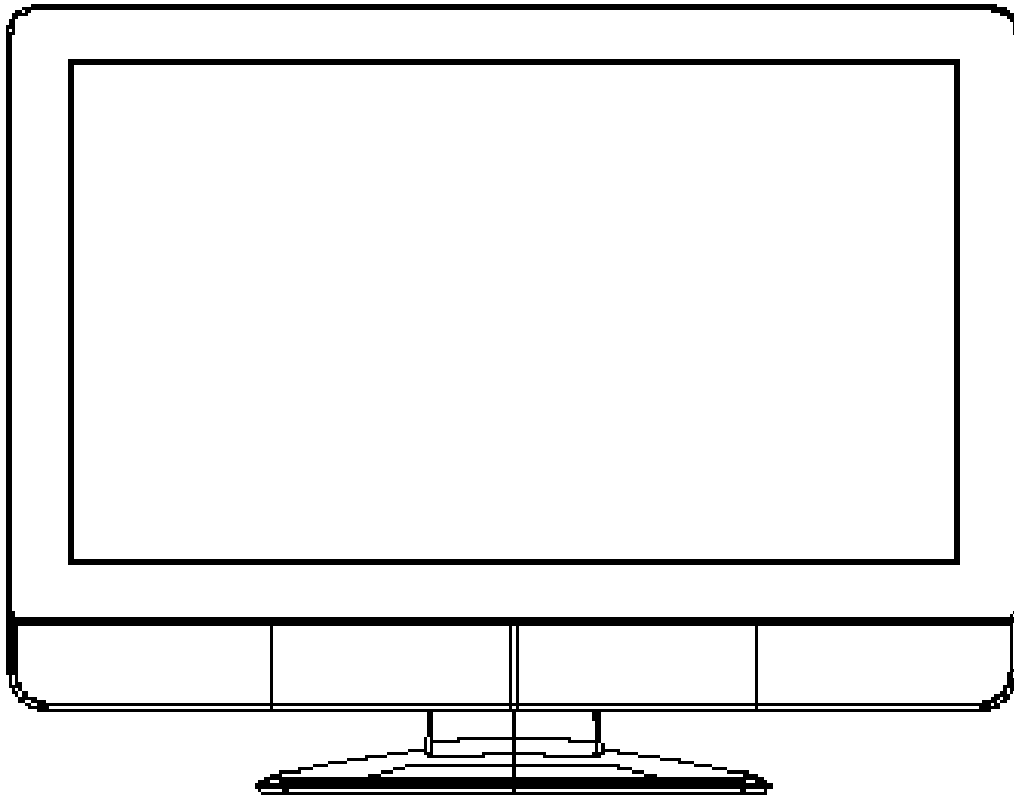


Service Manual



**Model #: VIZIO VO400E_
SHARP_LK400D3LA14**

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Top Confidential

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1. Main Board Circuit Diagram
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FCC INFORMATION

This equipment has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that the interference will not occur in a particular installation. If this equipment does cause unacceptable interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures -- reorient or relocate the receiving antenna; increase the separation between equipment and receiver; or connect the into an outlet on a circuit different from that to which the receiver is connected.

FCC WARNING

To assure continued FCC compliance, the user must use a grounded power supply cord and the provided shielded video interface cable with bonded ferrite cores. Also, any unauthorized changes or modifications to Amtrak products will void the user's authority to operate this device. Thus VINC Will not be held responsible for the product and its safety.

CE CERTIFICATION

This device complies with the requirements of the EEC directive 89/336/EEC with regard to "Electromagnetic compatibility."

SAFETY CAUTION

Use a power cable that is properly grounded. Always use the AC cords as follows – USA (UL); Canada (CSA); Germany (VDE); Switzerland (SEV); Britain (BASEC/BS); Japan (Electric Appliance Control Act); or an AC cord that meets the local safety standards.

Chapter 1 Features

1. Built in TV channel selector for TV viewing.
2. Simultaneous display of PC and TV images.
3. Connectable to PC's analog RGB port.
4. Built in HDTV, composite video, S-Video ,HDMI ,ATV out and DTV out ,Audio line out, Audio optical out.
5. Built in auto adjust function for automatic adjument of screen display.
6. Smoothing function enables display of smooth texts and graphics even if image with resolution lower than 1920x1080 is magnified.
7. Power saving to reduce consumption power too less than 3W.
8. On Screen Display: user can define display mode (i.e. color, brightness, contrast, sharpness, backlight), sound setting, TV channel program, aspect and gamma or reset all setting.

Chapter 2 Specification

1. TFT LCD CHARACTERISTICS

40”(LK400D3LA14) TFT LCD

Item	Specification
Active Screen Size	40 inch diagonal
Outline Dimension	952.0(W) x 551.0 (H) x 50.8 mm(D) (Typ.)
Pixel Pitch	0.46125 mm(H) x 0.46125 mm(V)
Pixel Format	1920 horiz. by 1080 vert. Pixels, RGB stripe arrangement
Color Depth	8bit + 2FRC 1.07B
Luminance, White	500 cd/m2 (Center 1point ,Typ.)
Viewing Angle (CR>10)	Viewing angle free (R/L 88 (Typ.), U/D 88 (Typ.))
Power Consumption	Total 220W (MAX.)
Weight	8.5 Kg (Typ.)
Display Mode	Transmissive mode, Normally black
Surface Treatment	Hard coating(3H) / Low-Haze Anti Glare / Haze value (8%)

2.Input Connectors

Service port (USB) , HDMIX3, RCA (DVI Audio IN),D-SUB15PIN (MINI, 3rows), RCAX2 (Component), RCAX2 (Audio IN) , RCAX1 (Audio IN), RCA (Composite) , S-Video (Composite), Tuner

3.Output Connectors

SPDIF Out (Optical Audio) , RCA (Audio OUT)

4. Power Supply

Power Consumption: 220W MAXPower OFF: to less than 1W MAX

5.Speaker

Output 6Ω/10W (max) X2

6. ENVIRONMENT

Operating Temperature: 5c~35c (Ambient)

Operating Humidity: Ta= 35 °C, 90%RHM (Non-condensing)

Operating Altitude: 0 - 14,000 feet (Non-Operating)

7. Dimensions (Physical dimension)

	With Base	Without Base
a. Height	722mm	694mm
b. Width	1028mm	1028mm
c. Depth	245mm	99.0mm

8. Weight (Physical weight)

Net : 21.8 kgs

Gross : 27.6 kgs

9. Precautions

Please pay attention to the followings when you use this TFT LCDmodule.

9-1. Mounting Precautions

- (1) You must mount a module using holes arranged in four corners or four sides.
- (2) You should consider the mounting structure so that uneven force (ex. Twisted stress) is not applied to the module. And the case on which a module is mounted should have sufficient strength so that external force is not transmitted directly to the module.
- (3) Please attach the surface transparent protective plate to the surface in order to protect the polarizer. Transparent protective plate should have sufficient strength in order to resist external force.
- (4) You should adopt radiation structure to satisfy the temperature specification.
- (5) Acetic acid type and chlorine type materials for the cover case are not desirable because the former generates corrosive gas of attacking the polarizer at high temperature and the latter causes circuit break by electro-chemical reaction.

-
- (6) Do not touch, push or rub the exposed polarizers with glass, tweezers or anything harder than HB pencil lead. And please do not rub with dust clothes with chemical treatment. Do not touch the surface of polarizer for bare hand or greasy cloth. (Some cosmetics are detrimental to the polarizer.)
 - (7) When the surface becomes dusty, please wipe gently with absorbent cotton or other soft materials like chamois soaks with petroleum benzine. Normal-hexane is recommended for cleaning the adhesives used to attach front / rear polarizers. Do not use acetone, toluene and alcohol because they cause chemical damage to the polarizer.
 - (8) Wipe off saliva or water drops as soon as possible. Their long time contact with polarizer causes deformations and color fading.
 - (9) Do not open the case because inside circuits do not have sufficient strength.

9-2. Operating Precautions

- (1) The spike noise causes the mis-operation of circuits. It should be lower than following voltage: $V = \pm 200\text{mV}$ (Over and under shoot voltage)
- (2) Response time depends on the temperature. (In lower temperature, it becomes longer.)
- (3) Brightness depends on the temperature. (In lower temperature, it becomes lower.) And in lower temperature, response time (required time that brightness is stable after turned on) becomes longer.
- (4) Be careful for condensation at sudden temperature change. Condensation makes damage to polarizer or electrical contacted parts. And after fading condensation, smear or spot will occur.
- (5) When fixed patterns are displayed for a long time, remnant image is likely to occur.
- (6) Module has high frequency circuits. Sufficient suppression to the electromagnetic interference shall be done by system manufacturers. Grounding and shielding methods may be important to minimize the interference.
- (7) Please do not give any mechanical and/or acoustical impact to LCM. Otherwise, LCM can't be operated its full characteristics perfectly.

-
- (8) A screw which is fastened up the steels should be a machine screw. (if not, it causes metallic foreign material and deal LCM afatal blow)
 - (9) Please do not set LCD on its edge.

9-3. Electrostatic Discharge Control

Since a module is composed of electronic circuits, it is not strong to electrostatic discharge. Make certain that treatment persons are connected to ground through wrist band etc. And don't touch interface pin directly.

9-4. Precautions for Strong Light Exposure

Strong light exposure causes degradation of polarizer and color filter.

9-5. Storage

When storing modules as spares for a long time, the following precautions are necessary.

- (1) Store them in a dark place. Do not expose the module to sunlight or fluorescent light. Keep the temperature between 5°C and 35°C at normal humidity.
- (2) The polarizer surface should not come in contact with any other object. It is recommended that they be stored in the container in which they were shipped.

9-6. Handling Precautions for Protection Film

- (1) The protection film is attached to the bezel with a small masking tape. When the protection film is peeled off, static electricity is generated between the film and polarizer. This should be peeled off slowly and carefully by people who are electrically grounded and with well ion- blown equipment or in such a condition, etc.
- (2) When the module with protection film attached is stored for a long time, sometimes there remains a very small amount of glue still on the bezel after the protection film is peeled off.
- (3) You can remove the glue easily. When the glue remains on the bezel surface or its vestige is recognized, please wipe them off with absorbent cotton waste or other soft material like chamois soaked with normal-hexane.

Chapter 3 On Screen Display

Main unit button

Power

MENU

CH ▲

CH ▼

VOL +

VOL -

Input

On Screen Display

TV Source

A. Picture :

- a. Picture Mode (Custom/ Standard / Movie / Game)
- b. Backlight (0~100)
- c. Brightness (0~100)
- d. Contrast (0~100)
- e. Color (0~100)
- f. Tint (-32~32)
- g. Sharpness (0~7)
- h. Advanced Video
 - h-1. Noise Reduction (Off/Low/Medium/Strong)
 - h-2. Color Enhancement (Normal/Rich Color/ "Green/Flesh"/ "Green/Blue"/Off)
 - h-3. Advanced Adaptive Luma (Off/Low/Medium/Strong/Extend)
 - h-4 Backlight Control(Mega DCR/OPC/Off)
 - h-5 Color Temperature (Custom/Cool/Normal/Computer)
 - Custom : Red (0~255)
 - Green (0~255)
 - Blue (0~255)
 - h-6 Film Mode(Off/Auto)

B. Audio Mode : (Flat/Rock/Pop/Classic/Jazz)

- a. Equalizer
- b. Balance (-50~50)
- c. SRS TSHD (On/Off)
- d. Digital Audio Out (Dolby Digital/PCM/Off)
- e. Speakers (On/Off)
- f. Analog Audio Out (Fixed/Variable)
- g. Lip Sync (0~5)

C. TV :

- a. Tuner Mode (Antenna/Cable)
- b. Auto Search
- c. Partial Channel Search
 - c-1. Scan Mode ("Analog/Digital"/Analog/Digital)
 - c-2. From Channel (Cable 1~135 / Antenna 2~69)
 - c-3. To Channel (Cable 1~135 / Antenna 2~69)
- d. Skip Channel (Cable 1~135 / Antenna 2~69)
- e. MTS (Stereo/SAP/Mono)
- f. Time Zone
(Hawaii/Atlantic/Eastern/Indiana/Central/Mountain/Arizona/Newfoundland/Pacific/Alaska)
- g. Daylight Saving (On/Off)
- h. Channel Info

D. Setup :

- a. Language (English/Francais/Espanol)
- b. Sleep Timer (Off/30 Minutes/60 Minutes /90 Minutes /120 Minutes)
- c. Wide (Zoom1/Zoom2/Panoramic/Normal)
- d. Input Naming (AV1/AV2//Comp1/Comp2/RGB/HDMI1/ HDMI2/ HDMI3)
- e. CC (Off/CC1/ CC2/ CC3/ CC4)
- f. Digital CC Style
 - f-1. Caption Style (Custom/As Broadcaster)
Custom :
 - f-2. Font Size (Large/Small/Medium)
 - f-3. Font Color (white/Green/Blue/Red/Cyan/Yellow/Magenta/Black)

-
- f-4. Font Opacity (Translucent/solid/Transparent)
 - f-5. Background Color (white/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - f-6. Background Opacity (Translucent/solid/Transparent)
 - f-7. Window Color (white/Green/Blue/Red/Cyan/Yellow/Magenta/Black)
 - f-8. Window Opacity (Translucent/solid/Transparent)

- g. H/V Position
 - g-1. H.Position (0~64)
 - g-2. V.Position (0~32)
 - g-3. H.Size (0~100)
 - g-4. V.Size (0~100)

- h. Reset All Setting

E. Parental :

- a. PASSWORD

RGB Mode

A. Picture :

- a. Auto Adjust (Run)
- b. Backlight (0~100)
- c. Brightness (0~100)
- d. Contrast (0~100)
- e. Color Temperature(Custom/6500/9300)
 - e-1. Custom : Red (0~255)
 Green (0~255)
 Blue (0~255)
- f. H-size (0~255)
- g. H-Position (0~100)
- h. V-Position (0~100)
- i. Fine Tune (0~31)

B. Audio Mode : (Flat/Rock/Pop/Classic/Jazz)

- a. Equalizer
- b. Balance (-50~50)
- c. SRS TSHD (On/Off)
- d. Digital Audio Out (Dolby Digital/PCM/Off)
- e. Speakers (On/Off)
- f. Analog Audio Out (Fixed/Variable)
- g. Lip Sync (0~5)

C. Setup :

- a. Language (English/Francais/Espanol)
- b. Sleep Timer (Off/30 Minutes/60 Minutes /90 Minutes /120 Minutes)
- c. Wide (Full/Normal)
- d. Input Naming (AV1/AV2/Comp1/Comp2/RGB/HDMI1/ HDMI2/ HDMI3)
- e. Reset All Setting

HDMI MODE

A. Picture :

- a. Picture Mode (Custom/ Standard / Movie / Game/Vivid/Football/Golf/Basketball/baseball)
- b. Backlight (0~100)
- c. Brightness (0~100)
- d. Contrast (0~100)
- e. Color (0~100)
- f. Tint (-32~32)
- g. Sharpness (0~7)
- h. Advanced Video
 - h-1. Noise Reduction (Off/Low/Medium/Strong)
 - h-2. Color Enhancement (Normal/Rich Color/ "Green/Flesh"/ "Green/Blue"/Off)
 - h-3. Advanced Adaptive Luma (Off/Low/Medium/Strong/Extend)
 - h-4 Backlight Control(Mega DCR/OPC/Off)
 - h-5 Color Temperature (Custom/Cool/Normal/Computer)
 - Custom : Red (0~255)
 - Green (0~255)
 - Blue (0~255)

h-6 Film Mode(Off/Auto)

B. Audio Mode : (Flat/Rock/Pop/Classic/Jazz)

- a. Equalizer
- b. Balance (-50~50)
- c. SRS TSHD (On/Off)
- d. Digital Audio Out (Dolby Digital/PCM/Off)
- e. Speakers (On/Off)
- f. Analog Audio Out (Fixed/Variable)
- g. Lip Sync (0~5)

C. Setup :

- a. Language (English/Francais/Espanol)
- b. Sleep Timer (Off/30 Minutes/60 Minutes /90 Minutes /120 Minutes)
- c. Wide (Full/Zoom1/Stretch)
- d. Input Naming (AV1/AV2/Comp1/Comp2/RGB/HDMI1/ HDMI2/ HDMI3)
- e. H/V Position
 - e-1. H.Position (0~64)
 - e-2. V.Position (0~32)
 - e-3. H.Size (0~100)
 - e-4. V.Size (0~100)
- f. Reset All Setting

Video Sources :

AV 、COMPONENT1 、COMPONENT2

A. Picture :

- a. Picture Mode (Custom/Standard/Movie/Game/Vivid/Football/ Golf/ Basketball/ Baseball)
- b. Backlight (0~100)
- c. Brightness (0~100)
- d. Contrast (0~100)
- e. Color (0~100)
- f. Tint (-32~32)
- g. Sharpness (0~100)

h. Advanced Video

h-1. Noise Reduction (Off/Low/Medium/Strong)

h-2. Color Enhancement (Normal/Rich Color/ "Green/Flesh"/ "Green/Blue"/Off)

h-3. Advanced Adaptive Luma (Off/Low/Medium/Strong/Extend)

h-4 Backlight Control(Mega DCR/OPC/Off)

h-5 Color Temperature (Custom/Cool/Normal/Computer)

Custom : Red (0~255)

Green (0~255)

Blue (0~255)

h-6 Film Mode(Off/Auto)

B. Audio Mode : (Flat/Rock/Pop/Classic/Jazz)

a. Equalizer

b. Balance (-50~50)

c. SRS TSHD (On/Off)

d. Digital Audio Out (Dolby Digital/PCM/Off)

e. Speakers (On/Off)

f. Analog Audio Out (Fixed/Variable)

g. Lip Sync (0~5)

C. Setup :

a. Language (English/Francais/Espanol)

b. Sleep Timer (Off/30 Minutes/60 Minutes /90 Minutes /120 Minutes)

c. Wide (Full/Zoom/Stretch)

d. Input Naming (AV1/AV2/Comp1/Comp2/RGB/HDMI1/ HDMI2/ HDMI3)

e. CC (Off/CC1/ CC2/ CC3/ CC4)

f. CC On Mute (Off/On)

g. Digital CC Style

g-1. Caption Style (Custom/As Broadcaster)

g-2. Font Size (Large/Small/Medium)

g-3. Font Color (white/Green/Blue/Red/Cyan/Yellow/Magenta/Black)

g-4. Font Opacity (Translucent/solid/Transparent)

g-5. Background Color (white/Green/Blue/Red/Cyan/Yellow/Magenta/Black)

g-6. Background Opacity (Translucent/solid/Transparent)

g-7. Window Color (white/Green/Blue/Red/Cyan/Yellow/Magenta/Black)

g-8. Window Opacity (Translucent/solid/Transparent)

h. H/V Position

h-1. H.Position (0~64)

h-2. V.Position (0~32)

h-3. H.Size (0~100)

h-4. V.Size (0~100)

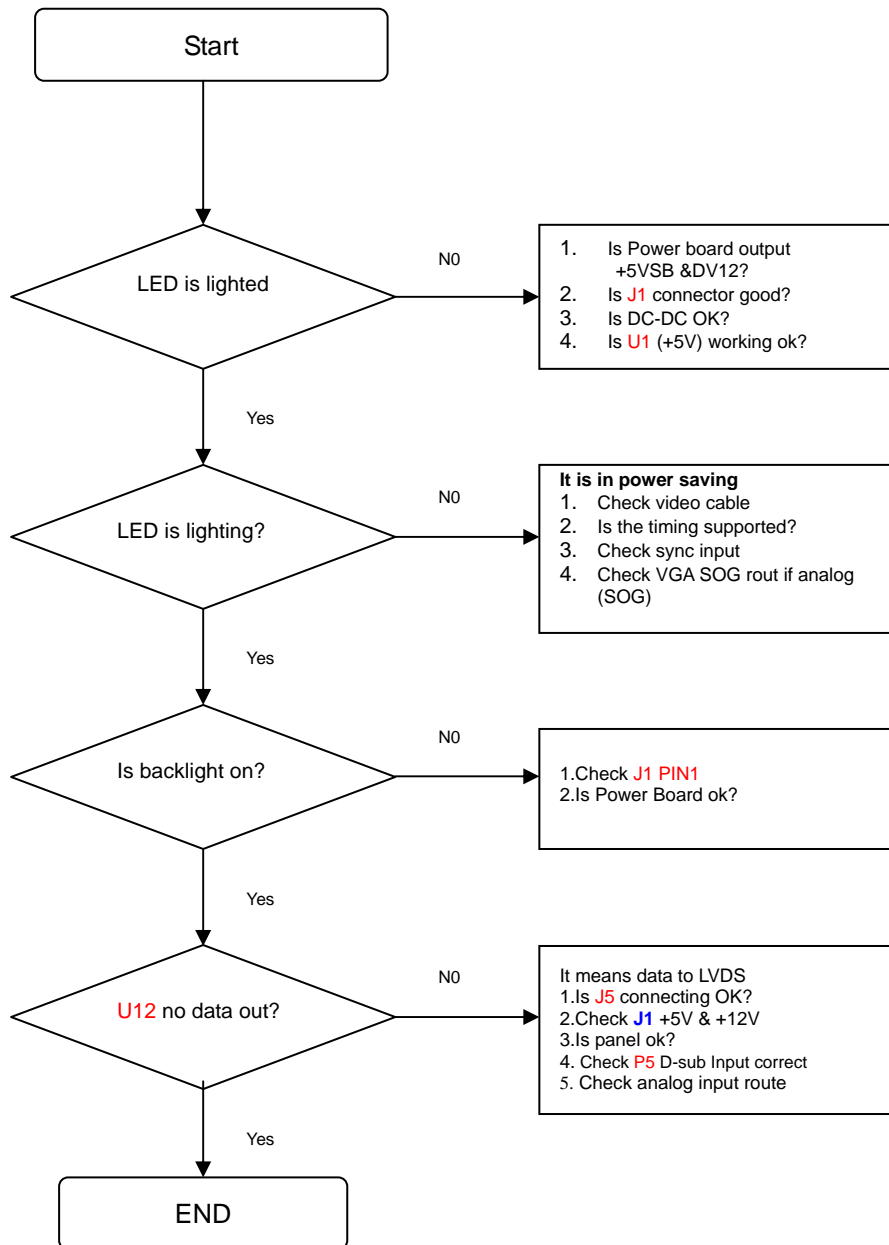
i. Reset All Setting

D. Parental :

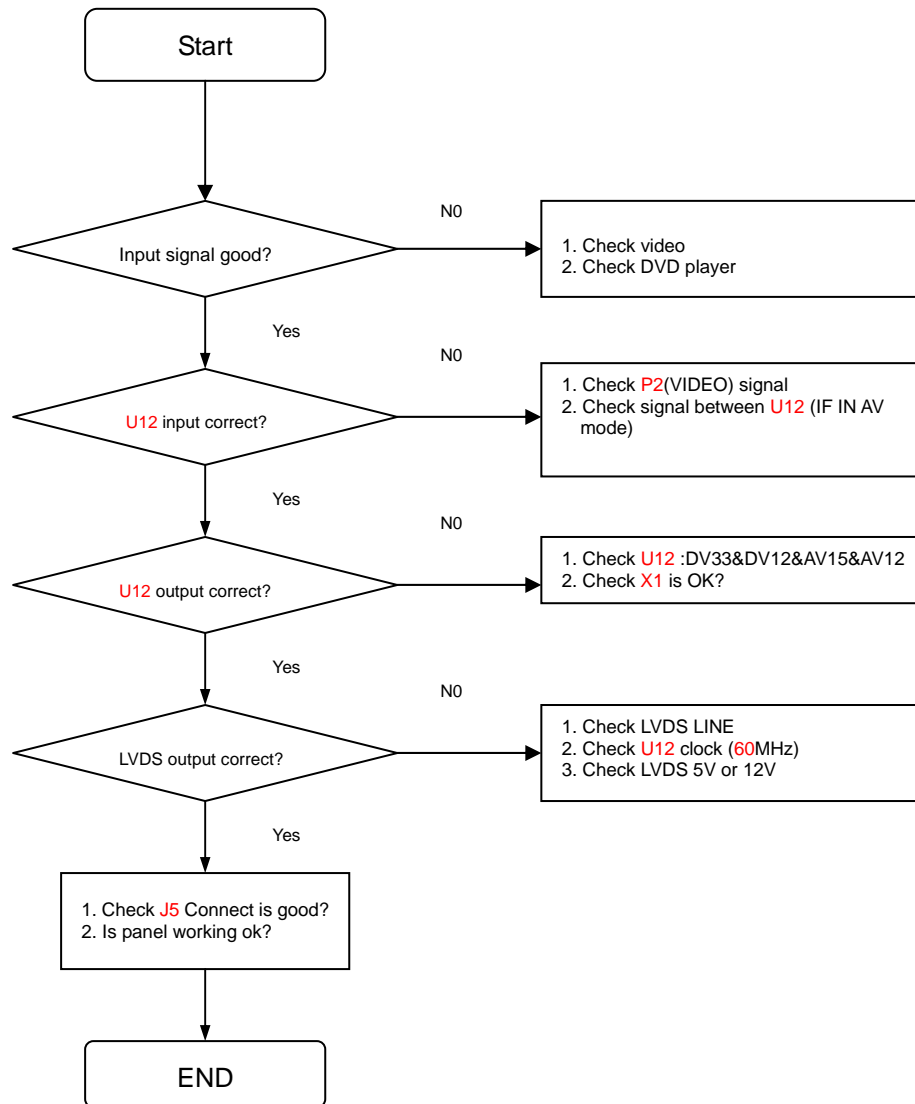
a. PASSWORD

Chapter 9 Trouble shooting

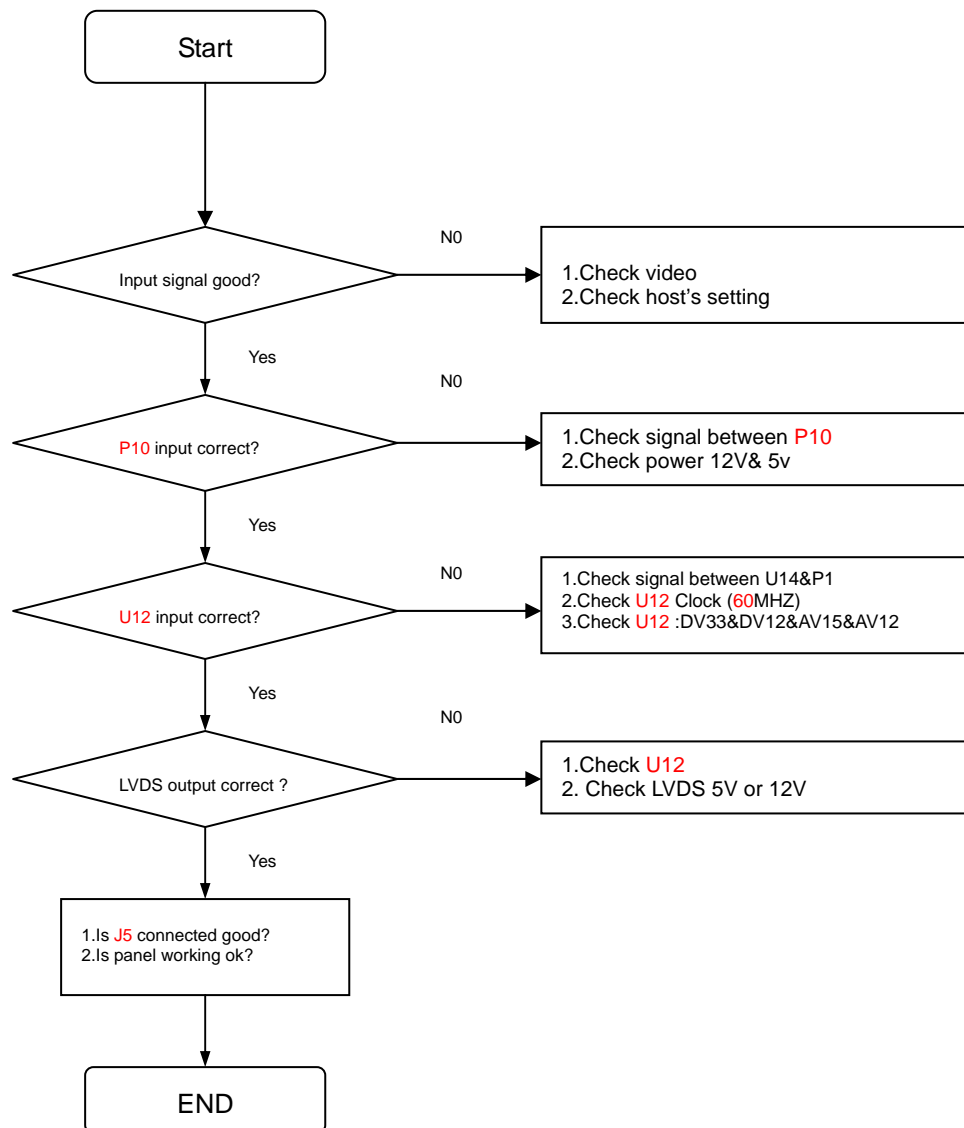
MONITOR DISPLAY NOTHING (PC MODE)



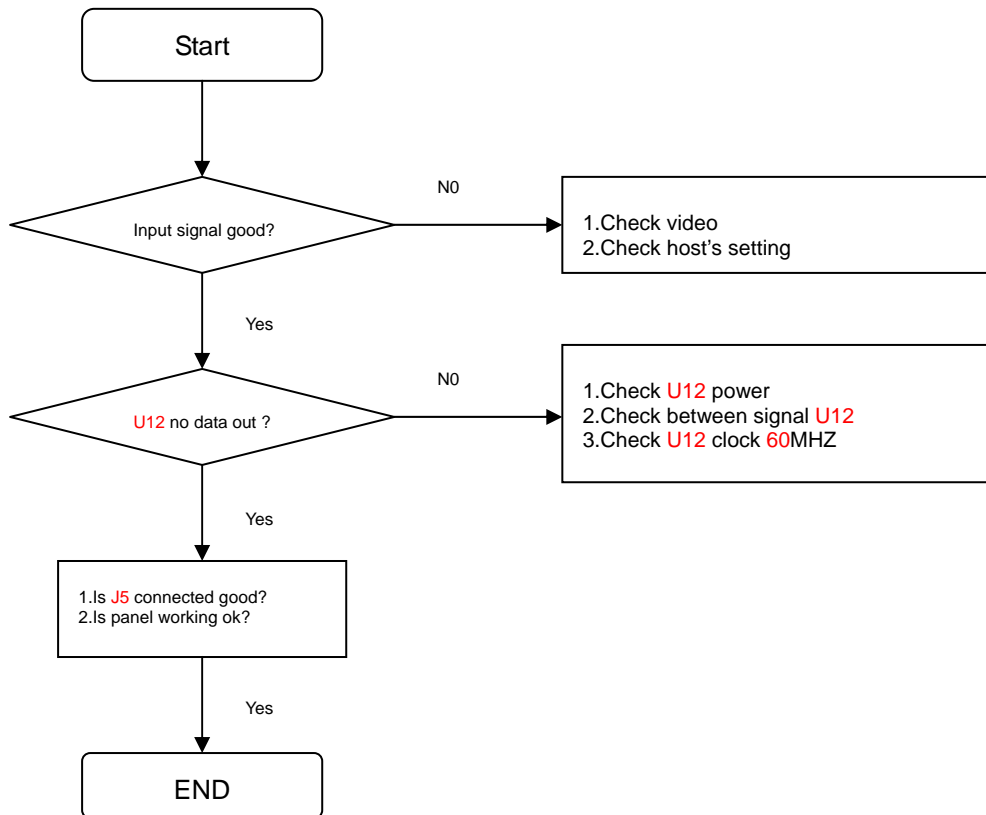
(TV, COMPOSITE VIDEO) IS NOT DISPLAY CORRECTLY



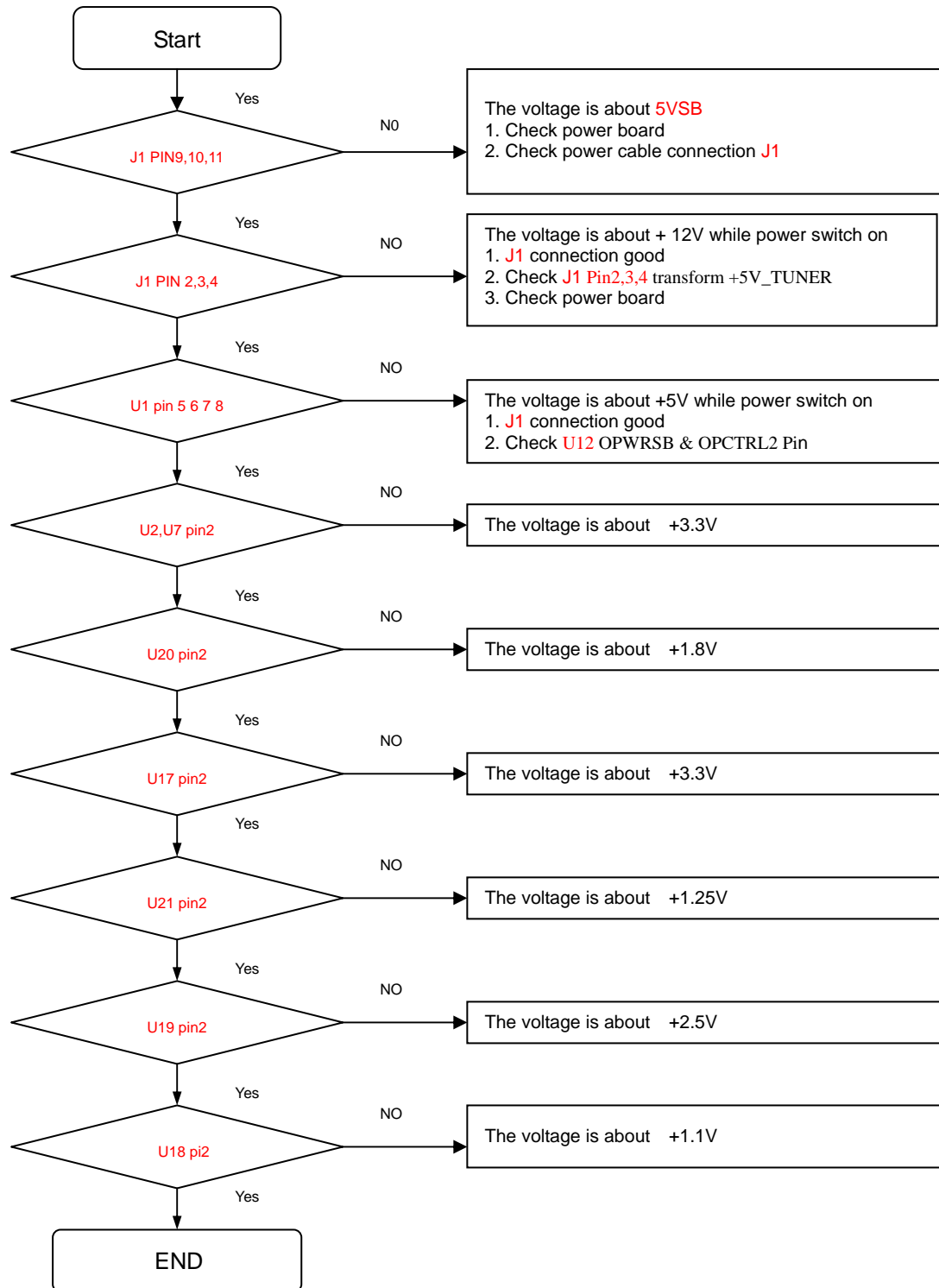
(COMPONENT) IS NOT DISPLAY CORRECTLY



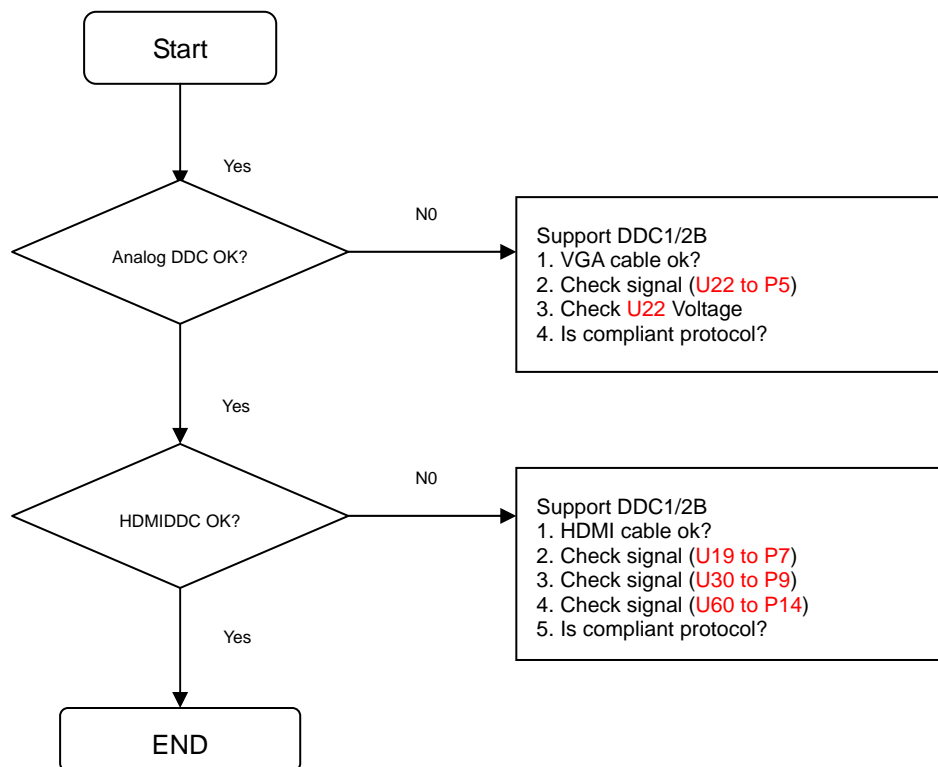
(HDMI) IS NOT DISPLAY CORRECTLY



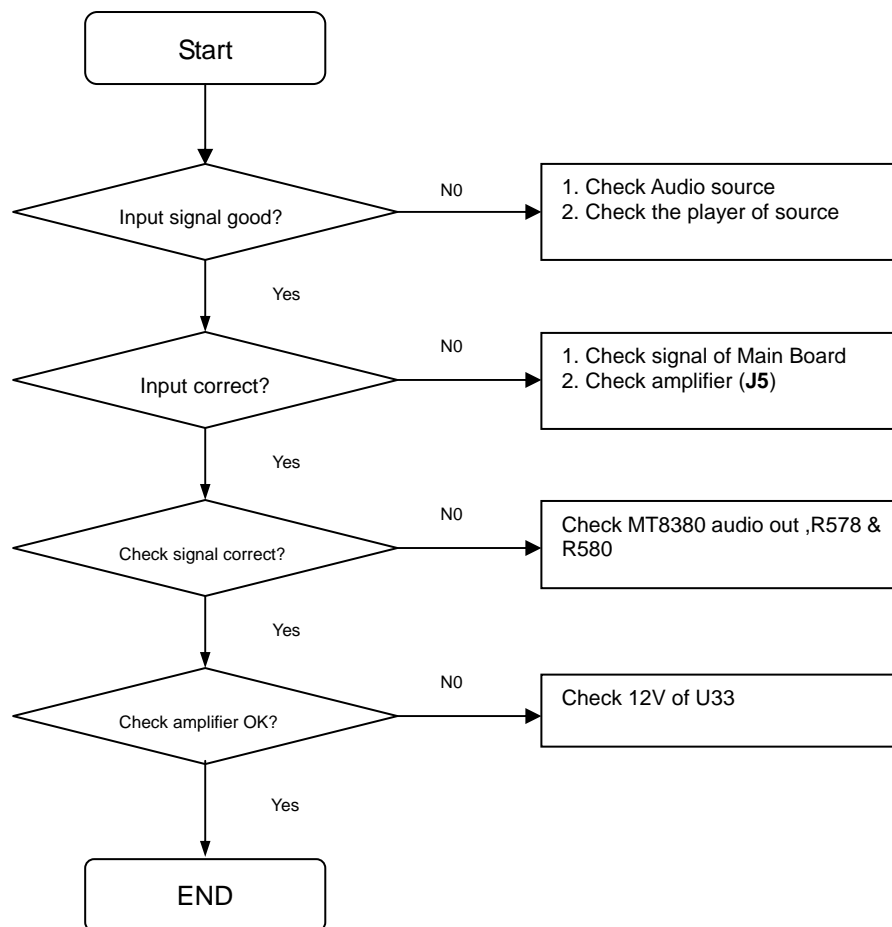
ROUBLE OF DC-DC CONVERTER



TROUBLE OF DDC READING



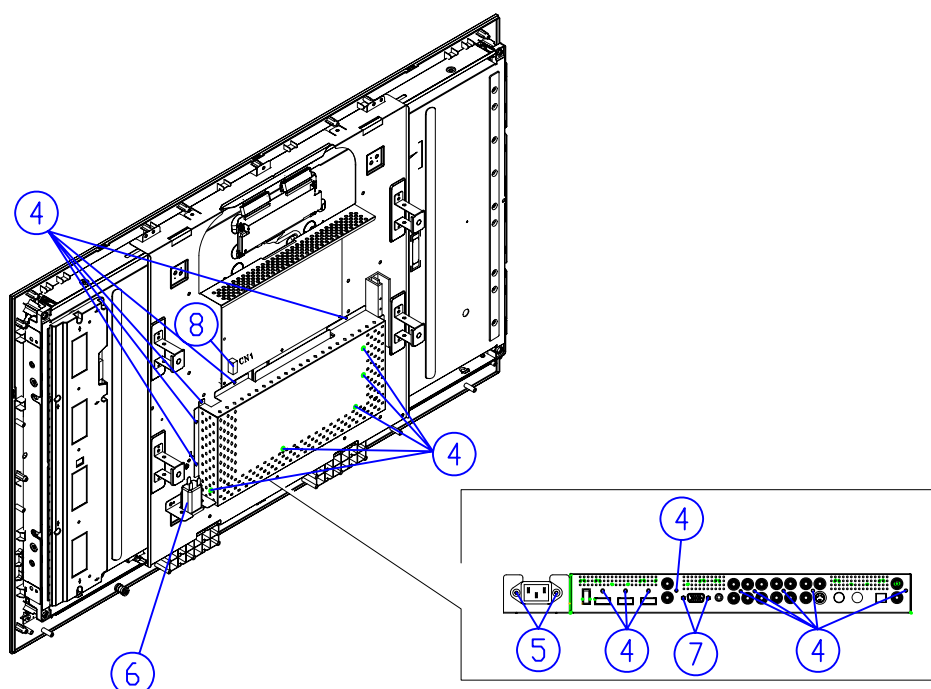
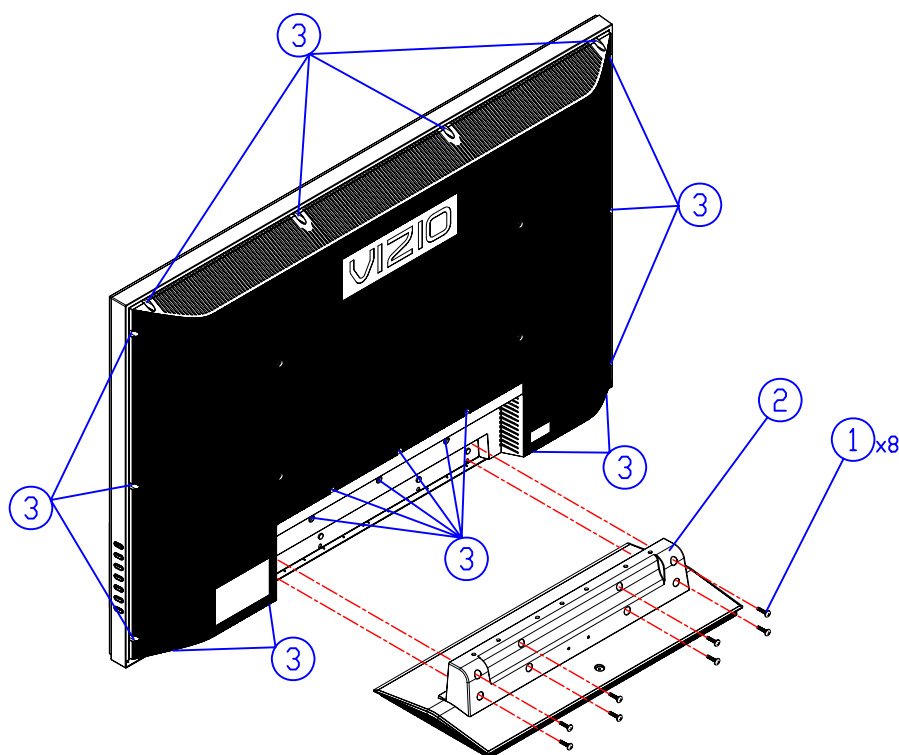
(TV_SIDE, AUDIO) IS NOT DISPLAY CORRECTLY



1. REAR COVER ASS'Y /CONNECTOR BD ASS'Y REMOVAL

Note: Spread a mat underneath to avoid damaging the TV surface.

- 1) Remove eight screws ① from Base Ass'y ②.
- 2) Separate the Base Ass'y ②.
- 3) Remove sixteen screws ③ from rear cover.
- 4) Separate the rear cover.
- 5) Remove nineteen screws ④, two hexagon screws ⑦ and two screws ⑤.
- 6) Remove the connector ⑧ (CN1) of the AC inlet cable.
- 7) Separate the Main shielding and AC inlet ⑥.



2. POWER BD ASS'Y REMOVAL

- 1) Remove the connector ⑨ (CN2) of the inverter cable.
- 2) Remove the connector ⑩ (CN4) of the Main cable.
- 3) Remove six screws ⑪ and the spacer support ⑫ from Power BD ASS'Y .
- 4) Separate the Power BD ASS'Y .

3. MAIN BD ASS'Y REMOVAL

- 1) Remove the connector ⑬ (J4) of the speaker cable.
- 2) Remove the connector ⑭ (J1) of the Main cable.
- 3) Remove the connector ⑮ (J3) of the LVDS single cable.
- 4) Remove the connector ⑯ (J2) of the keypad cable .
- 5) Remove six screws ⑰ from MAIN BD .
- 6) Separate the MAIN BD .

